

CRITICAL INFRASTRUCTURE · INDUSTRIAL IOT

Eliminating connectivity risk for critical infrastructure

How FreeWave, Velocity IoT, and Flolive delivered secure, plug-and-play cellular connectivity for the world's most demanding field environments.

A PARTNERSHIP BETWEEN

FREEWAVE

Velocity IoT

flo.
LIVE

THE BACKGROUND

Four decades of telemetry, in the field's harshest corners

FreeWave Technologies is a leading provider of industrial IoT telemetry solutions, with deep roots in oil and gas, utilities, water treatment, and government sectors across the United States and internationally. Its hardware – including the Elements™ ES1000 cellular gateway – connects thousands of remote assets to SCADA systems and control centers, transmitting critical operational data from some of the most demanding field environments in the world.

With nearly four decades of experience in wireless telemetry, FreeWave serves customers who depend on uninterrupted, bidirectional command and control. Their deployments span remote oil pads, utility infrastructure, and government applications – environments where a connectivity failure is more than an inconvenience; it's an operational and security risk.



Elements™ ES1000 – FreeWave's integrated cellular gateway

BUSINESS IMPACT BY THE NUMBERS

100%

of devices ship pre-configured – **zero** additional network setup.

3

layers of protection – carrier-agnostic SIM, zero-trust networking, and WAN failover.

3

layers of resiliency – multi-carrier in-country, Multi-IMSI SIM, geo-redundant core.

Securing and simplifying critical IoT connectivity

As FreeWave scaled its cellular-backhauled deployments, a recurring set of network and security events put both operational reliability and customer trust in the spotlight.

Public static IP vulnerabilities

Carrier-issued static IPs are publicly visible. In one case, hundreds of devices were compromised after bots pinged public IPs, gained access via default credentials, and wiped entire Linux environments.

Port-forwarding complexity

Without static IPs, customers were forced into complex port-forwarding setups that many systems couldn't handle reliably – friction at every deployment.

Latency & battery limits

Routing data through distant gateways added latency that cut real-time responsiveness and drained battery on devices built to run for years without servicing.

Carrier lock-in & borders

IPs tied to one carrier meant switching providers required reconfiguring the entire fleet – and international growth added costly regional homologation.

Bidirectional command & control

Traditional approaches leaned on public IPs and open inbound ports, raising exposure. FreeWave needed secure two-way connectivity without breaking cybersecurity best practices.

No micro-segmentation

VPN-based solutions offered all-or-nothing access, with no way to isolate individual devices or restrict access by user or port.



"Customers want to deploy a product and have it just work. They don't want to learn what an MVNO or a data SIM is – they have one need: to get data from end to end. That's what they care about."

William Conley – Director of Technical & Customer Support, FreeWave

What FreeWave needed from connectivity

01 | Carrier agnosticism at scale

A single SIM that operates across any network, so a change in carrier relationship never forces a customer to reconfigure their SCADA system or take assets offline.

02 | Plug-and-play deployment

FreeWave's customers are operators, not network engineers. Connectivity had to work straight out of the box, so the ES1000 could be shipped, plugged in, and connected with zero configuration.

03 | A path to international expansion

Connectivity that supports deployments in Latin America and beyond – without separate carrier agreements or homologation processes in each region.

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Our customers demand rugged, reliable connectivity, and partnering with Velocity IoT and Flolive gives us that. We can reliably connect their assets to the real world – and our real world is SCADA.

William Conley – Director of Technical & Customer Support, FreeWave

ONE DEVICE, THREE DEMANDS

Any network. Anywhere. Ready to cross borders – all in a single ruggedized gateway.



THE SOLUTION

One pre-configured, plug-and-play device – secure from anywhere

Working with Velocity IoT and Flolive, FreeWave deployed the ES1000 – a fully integrated connectivity and security solution built on its embedded zero-trust platform, Zentry, and Flolive's owned global core network and Multi-IMSI SIM infrastructure, with locally distributed packet gateways and service across 190+ countries. The unified system eliminates static IPs, port forwarding, and carrier lock-in.



"Our approach at Velocity IoT is 90% planning and 10% execution – defining the right connectivity strategy, then validating it across the device side and the network side with Flolive, so by the time the product reaches the field, it just works."

Anthony Protopsaltis – Principal, Velocity IoT

RESULTS – RUGGED, RELIABLE CONNECTIVITY THAT'S READY TO SCALE



Carrier-agnostic connectivity

Built-in Multi-IMSI SIMs on a dedicated core network connect to the best available network automatically – a carrier change never forces a SCADA reconfiguration. Local packet gateways cut latency and extend battery life.



Plug-and-play deployment

On power-up the device connects with no network setup – carrier selection, APN configuration, and provisioning are all handled automatically.



Granular access control

Unlike VPNs, Zentry isolates access by device, user, and port – precise control over who can see data versus who can change configurations.



One SIM, one integration, one bill

Scale from ten devices to ten thousand across continents – no separate carrier accounts, no billing reconciliation, no new contracts at every border.



FloLive delivers IoT connectivity through a global network purpose-built for intelligent IoT: seamless, secure, adaptive, and compliant. Powered by distributed core networks and more than 40 local points of presence, FloLive enables low-latency performance, built-in redundancy, and end-to-end security. Its platform simplifies global IoT operations through Multi-IMSI SIM and eSIM capabilities – enabling single-SIM, single-SKU deployment with centralized visibility and control.

FREEWAVE

FreeWave Technologies is a leading provider of industrial IoT telemetry solutions, with nearly four decades of experience in wireless telemetry across oil and gas, utilities, water treatment, and government sectors – connecting thousands of remote assets to SCADA systems in the world's most demanding field environments.



At Velocity IoT, our mission is to make global IoT connectivity simple and accessible. Our multi-carrier solution is designed for IoT applications and backed by real-world deployment expertise, with a hands-on team that supports customers across hardware, engineering, testing, and lifecycle – helping avoid the common pitfalls that derail IoT projects.

LET'S CONNECT

Get in touch to discuss how we can meet your IoT requirements. We're sure to surprise you.

flolive.net

